#3476
OK

WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

October 19, 2010

TO: Internal File

THRU: Jim Smith, Permit Supervisor JS 10/27/2010

FROM: Steve Christensen Environmental Scientist SHC

RE: 2010 1st Quarter Water Monitoring, Consolidation Coal Company, LLC, Emery Deep Mine, C/015/0015, WQ10-1, Task ID #3476

The Emery Deep Mine is an active coalmine. The coal mining operation utilizes room and pillar mining techniques with the use of a continuous miner machine. The coal reserves are fully extracted (thus falling into the planned subsidence category).

The approved Mining and Reclamation Plan (MRP) outlines the water monitoring requirements beginning on page VI-28. Table VI-17, *Emery Mine Hydrologic Monitoring Program* contains a comprehensive list of all groundwater (springs/seeps), surface water, groundwater monitoring wells and Utah Pollutant Discharge Elimination System (UPDES) outfalls. Plate VI-4, *Ground Water Monitoring Well and Surface Water Monitoring Site Location Map* depicts the locations of the various ground and surface water monitoring sites (including the UPDES discharge/outfall points).

1. Was data submitted for all of the MRP required sites? YES ☒ NO ☐

Springs

The MRP outlines the sampling of 5 springs within the permit and adjacent area. Flow and field parameters are sampled quarterly with water quality samples collected in the 2nd and 3rd quarters.

The Permittee submitted data for all required springs: SP-10, SP-11, SP-13, SP-14 and SP-15. None of the monitored spring sites recorded a flow for this quarter, which follows historic trends for 1st quarter sampling.

Streams

The MRP outlines the sampling of 8 surface water monitoring stations within the permit and adjacent area. Surface water monitoring site SWMS-1 is actively monitored;

however, not listed in the MRP.

The Permittee did not submit data for surface water monitoring site SWMS-10.

Wells

The MRP outlines the sampling of 33 ground water monitoring wells within the permit and adjacent area. Of the 33 wells, 14 are monitored quarterly for water level only. The remaining 19 wells are sampled for water quality on a quarterly basis with the exception of wells RDA-1, RDA-2, RDA-3, RDA-4, RDA-5 and RDA-6 (sampled annually in the second quarter for both field parameters and water quality).

Six of the 33 well installations (AA, H, I, R2, T1 and T2)) contain clusters of casing completed to different depths within the underlying strata. Well AA contains four completions (AA-B, AA-L, AA-M and AA-U). Wells H and I contain four completions as well (H-B, H-L, H-M, H-U and I-B, I-L, I-M and I-U respectively). Well R2 contains three completions (R2-B, R2-M and R-U). Well T1 contains two completions (T1-B and T1-U). Well T2 contains two completions as well (T2-B and T2-U).

The Permittee submitted data for all required wells.

UPDES

The Emery Deep Mine's UPDES Permit, #UT0022616, identifies 9 outfalls (001, 002, 003, 004, 005, 006, 007, 008 and 009). The discharges from each of the outfalls ultimately report to Quitchupah Creek, a tributary of Muddy Creek. The receiving waters are designated according to Utah Administrative Code (UAC) R317-2-13.1 as 2B, 3C and 4. Historically, only Outfalls 001 and 003 have ever recorded a discharge.

The Water Quality Board for the Division of Water Quality (DWQ) has approved a rule change that would allow for a site specific, in-stream standard for the Emery Deep's effluent limitations. The modified standard will establish an allowable TDS concentration of 3,800 parts per million (ppm) and a 2,000-ppm concentration of sulfate. DWQ representatives have indicated that they are waiting for Environmental Protection Agency (EPA) approval before the permit is modified from it's current standard of 3,500-ppm.

DWQ has been in negotiations with the Permittee for several years regarding a modification to their existing UPDES permit. The Permittee has entered into a compliance schedule as allowed under the rules of the Clean Water Act to modify their permit. The compliance schedule would produce a site-specific standard for the Emery Deep UPDES permit.

- *2B-Protected for secondary contact recreation such as boating, wading or*

similar uses.

- *3- Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.*
- *4- Protected for agricultural uses including irrigation of crops and stock watering.*

The Permittee submitted data for all required UPDES sites. Outfalls 001 and 003 were the only to report a discharge for this quarter.

2. Were all required parameters reported for each site? YES ☐ NO ☒

The required water quality data (as outlined in Table VI-17 of the approved MRP) was not submitted for the following monitoring wells: Kemmerer Well, SM1-4 and Emery Town Well #1.

Spring and seep water quality data is not collected in the 1st quarter.

3. Were any irregularities found in the data? YES ☒ NO ☐

UPDES Sites

Historically outfalls 002, 004, 005, 006, 007, 008 and 009 do not produce a discharge. These outfalls did not report a flow for this quarter.

Outfalls 001 and 003 are the primary outlets for discharging the ground water encountered within the mine works. TDS concentrations remain above the 3,500 ppm limit established by the UPDES permit.

TDS values for Outfall 001 were again, far above the established UPDES criteria with an average value of 4,100.6 ppm reported for the quarter. However; TSS and T-Fe values remain within compliant levels. Based upon 5 sampling events, reported TSS values remained below 5 ppm with T-Fe concentrations averaging 0.212 ppm.

Outfall 003 reported elevated TDS values this quarter as well with an average concentration of 3,764 ppm. As with Outfall 001, the remaining UPDES parameters for Outfall 003 remained well within the established compliance levels with an average T-Fe concentration of 0.025 ppm and TSS concentrations below 5 ppm.

4. On what date does the MRP require a five-year re-sampling of baseline water data.

There is no commitment in the MRP to resample for baseline parameters.

5. Based on your review, what further actions, if any, do you recommend?

Continue to monitor the compliance schedule process currently underway between the Permittee and DWQ.

Follow up with Permittee regarding the missing water quality data and work to ensure that the approved water monitoring plan is now being adhered to.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES ☒ NO ☐

As discussed above, the Operator did not submit water quality data for monitoring wells: Kemmerer, SM1-4, Emery Town Well #1. In addition, a water level was not reported for monitoring well R1.

Spring water quality data was not submitted for the 3rd quarter of 2008. Additionally, water quality data was not submitted for monitoring wells T1-B, TP-U and USGS 4-1 in the 4th quarter of 2008. Water quality data was not submitted for the Kemmerer water monitoring well for the 1st quarter of 2009. Spring water quality data was not submitted for the 3rd quarter of 2009.

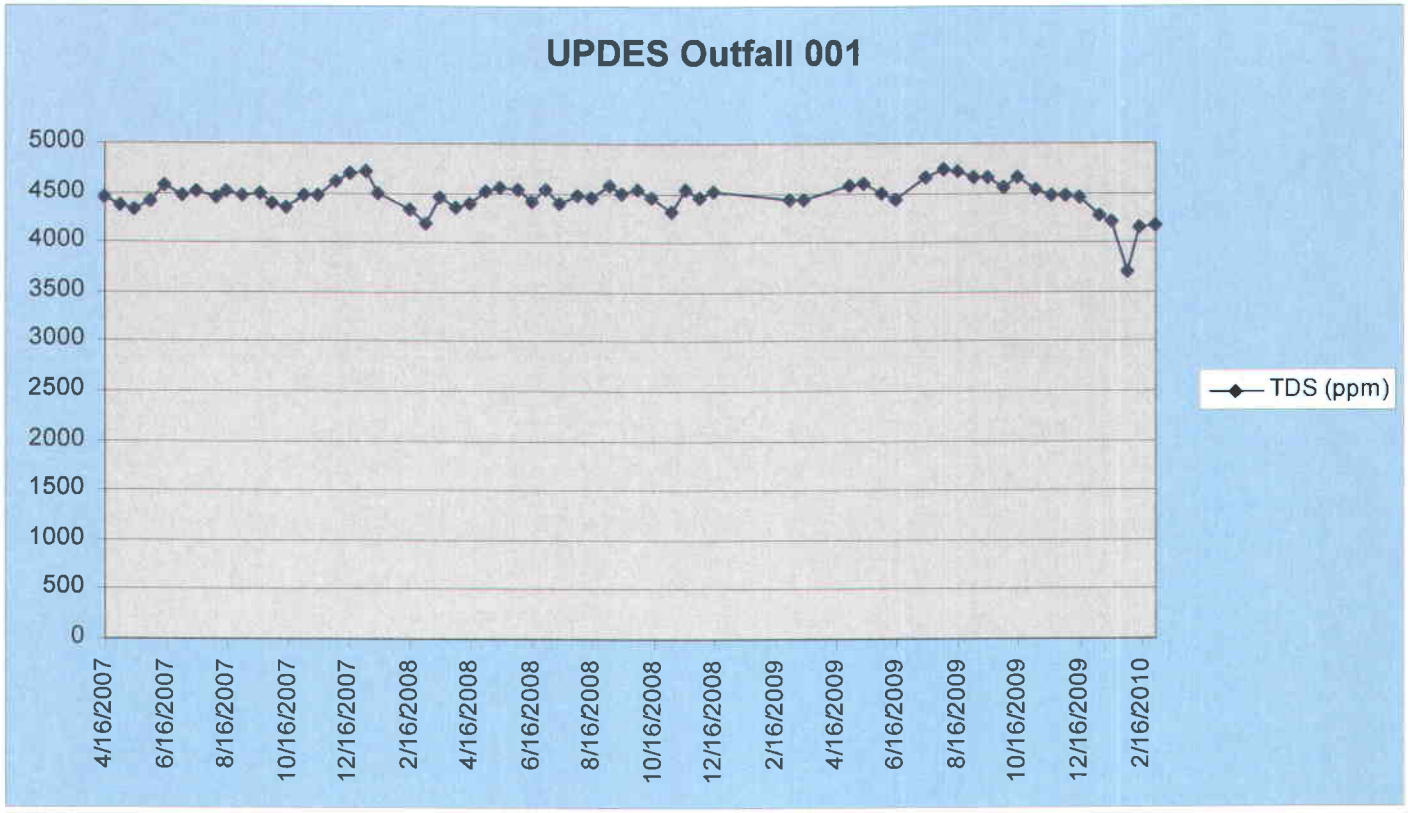
A notice of violation (NOV #10071) was issued to the Operator on October 6th, 2010. The NOV was issued for failing to provide the required water monitoring data as outlined in Table VI-17 of the approved MRP. Based upon conversations with mine representative Jaren Jorgensen, the water monitoring requirements outlined in Table VI-17 are now being adhered to (beginning in the 2nd quarter of 2010).

7. Follow-up from last quarter, if necessary.

Work with Permittee in inputting missing data into the EDI and work to insure that the Permittee understands the water monitoring requirements as outlined in the approved Mining and Reclamation Plan (MRP).

8. Did the Mine Operator submit all the missing and/or irregular data?

No.


UPDES Outfall 001
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
4/16/2007
6/16/2007
8/16/2007
10/16/2007
12/16/2007
2/16/2008
4/16/2008
6/16/2008
8/16/2008
10/16/2008
12/16/2008
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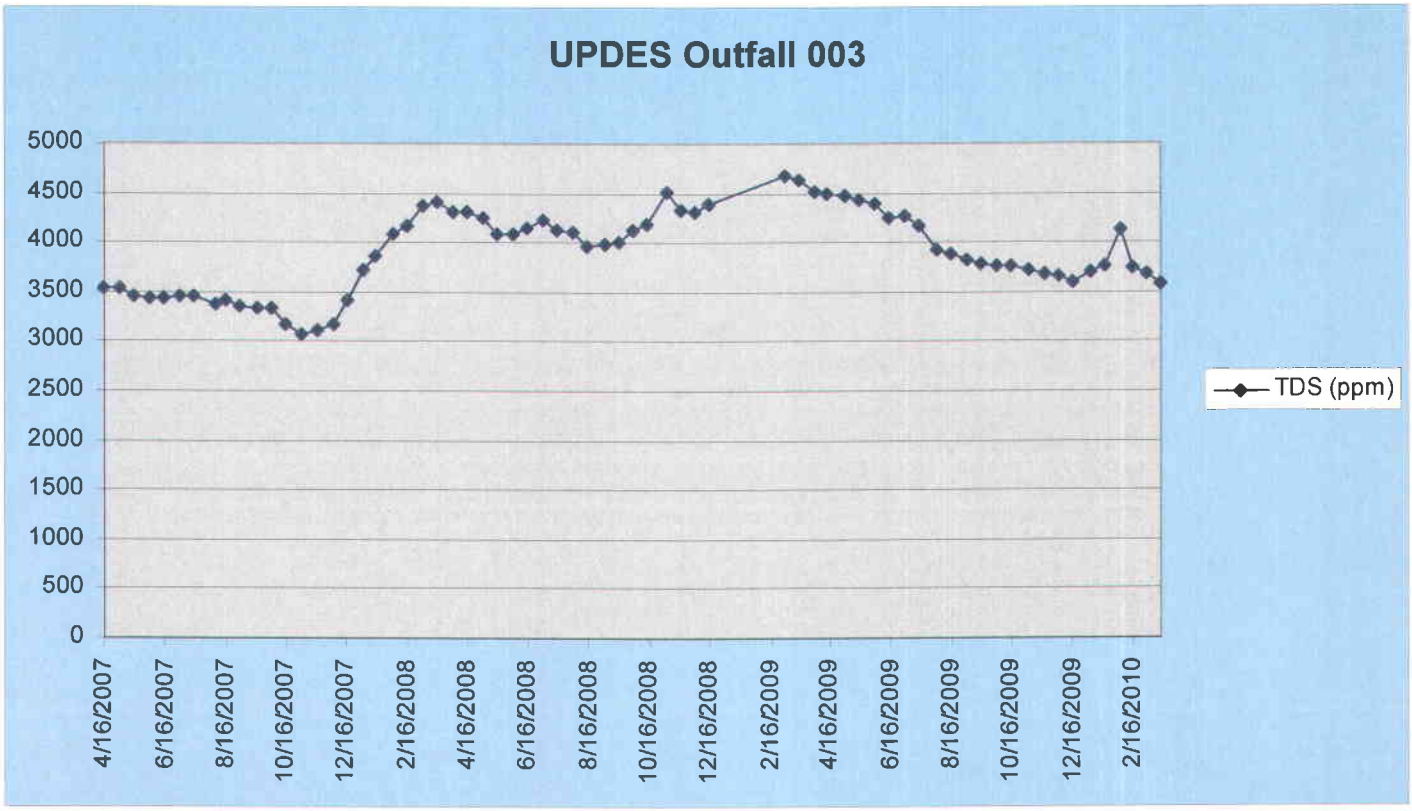
6/16/2009
8/16/2009
10/16/2009
12/16/2009
2/16/2010
TDS (ppm)


UPDES Outfall 003
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
4/16/2007
6/16/2007
8/16/2007
10/16/2007
12/16/2007
2/16/2008
4/16/2008
6/16/2008
8/16/2008
10/16/2008
12/16/2008
2/16/2009
4/16/2009
6/16/2009
8/16/2009
10/16/2009
12/16/2009
2/16/2010
TDS (ppm)